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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/502,478	02/11/2000	Kira Sterling Attwood	RSW9-99-129	5209

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EXAMINER
HO, THOMAS M ,

ART UNIT	PAPER NUMBER
2134	

DATE MAILED: 03/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.		Applicant(s)	
Office Action Summary		09/502,478		ATTWOOD ET AL.	
		Examiner		Art Unit	
		Thomas M Ho		2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *1/08/04* .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement. .

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed January 12th, 2004, have been fully considered but they are

not persuasive.

In reference to Chuah:

Applicant argues:

In paragraph 3 of page 5 – paragraph 1, page 6:

"In particular, Chuah wholly lacks any reference to receiving "a request from a host for a connection to a

port number on the server."

However, the Examiner maintains that a requesting a connection is well known to imply

a request for a port number on the server. For example (Siyan, p76-82) discloses the standard

port associated with a HTTP request is port 80. The standard port associated with an FTP

connection request is 21. The standard port associated with the Telnet connection is port 23.

Additionally each packet is understood to contain the source IP address, destination IP address,

source port, and the destination port.

Furthermore, changing the port numbers associated with these and other network requests

would be undesirable, since third party nodes would be listening for specific types of network

connections at their implicit ports. That is, because it is commonly understood and expected that

HTTP requests be received at port 80, vendors would conform to the prevailing port association.

Vendors that would make an HTTP request at a port other than port 80, would likely make a

connection request with another computer that would not be listening for an HTTP request at the

other port, or had that port reserved for another connection type.

The Examiner therefore maintains that the "AP receiving a connection request" does

imply or associate with a connection request, a connection to a particular port on the server.

"Chuah further lacks any reference to denying the request for a connection "if the number of connections to the port

assigned to the host exceeds a prescribed threshold."

The Examiner maintains that Chuah does indeed reference denying the request for a connection

if the number of connections to the port assigned to the host exceeds a prescribed threshold.

Chuah(Column 37, lines 32-34), (Column 37, lines 50-53)

Chuah(Column 37, lines 35-45) discloses "When an AP receives a connection request from a

new user of class 1, it makes a decision based on the current number of associated users Km. If

Km <= M, it admits the new user of class 1. The prescribed threshold is the value M or a Quality

of service parameter. Chuah explicitly discloses denying a connection assigned to the host.

The connection to the port assigned to the host is made when the connection is established. The

structure of each packet in the connection requires a destination port. Furthermore, the type of

connection itself is made known by the type of network connection(HTTP, FTP, Telnet) made

since these connection types themselves each have a port number assignment. (Siyan, p76-82)

for example, discloses a table of these well known assignments.

Importantly, Chuah does not teach "overriding the denial and allowing the request if a QoS parameter pertaining to

the requesting host permits the override." Rather, Chuah simply teaches the prioritized eviction of one class of

connection in favor of another as recited in column 37, lines 41-55 of the Chuah specification.

The Examiner maintains that Chuah does indeed teach overriding the denial and allowing the

request if a Qos parameter pertaining to the requesting host permits the override. Chuah(Column

37, lines 41-55) discloses

"In this usage priority admission scheme, there are two ways of admitting lower priority users. If

the system performance requirement is such that it is appropriate to disconnect lower priority

users after they are admitted, then lower priority users are admitted as long as the total number of

associated users is less than M. However if a new class 1 user appears, the AP will send a

disconnect message to one of the admitted class 2 users in order to admit the new class 1 user. In

one embodiment, a least recently used technique is used to identify the admitted class 2 user that

the AP will disconnect."

Rather, Chuah simply teaches the prioritized eviction of one class of connection in favor of another as recited in

column 37, lines 41-55 of the Chuah specification.

The Examiner acknowledges that Chuah teaches the prioritized eviction of one class of

connection in favor of another, but would like to point out more specifically that Chuah actually

teaches the prioritized eviction of a *user*(i.e., node, computer, client, network entity, connection

requesting network element) of one class over the *user* of another class.

This "prioritized eviction" occurs however, when the system performance requirement, or

Quality of Service(QoS parameter), renders it such that is it "appropriate to disconnect lower

priority users." Further lower class priority users may continue to enter as long as the total

number of users is less than M.

"..then lower priority users are admitted **as long as** the total number of associated users is less

than M."

The Examiner notes, it is therefore understood that a lower priority user would not be

admitted(it's connection request would be denied), if the total number of associated users was

not less than M.

However, that initial connection request denial may still be overridden to admit the new class 1

user by disconnecting a class 2 user by the least recently used technique.

The Examiner notes that the least recently used technique, LRU, is a technique well known in

computer algorithms(databases, operating systems) in which the least recently used element in a

queue, or list, or table is removed under the assumption that the least recently used element is the

least likely to be needed. Another technique is MRU (Most recently used).

It is well known to those of ordinary skill in the art that these algorithms are used because of the

necessity that in a system where service is granted to those below the threshold of priority, lower

priority elements may never be serviced(known as starvation). In order to avoid starvation, it is

desirable to override a denial to a lower priority element so that, all network requests may at

some point be serviced, and no request be ignored completely.

Finally Chuah fails to disclose the concept of disallowing a connection notwithstanding the QoS parameter where the number of connections to the port exceeds a threshold."

The Examiner maintains that the concept of disallowing a connection notwithstanding the QoS

parameter where the number of connections to the port exceeds a threshold is inherent to the

system of Chuah. It is inherent that the number of connections to a port would at some point

exceed a physical limitation(Memory) on how many connections to a port may be maintained.

That is, it is inherent to the disclosure of Chuah that there be less than an infinite number of

connections to a port nothwithstanding the QoS parameter.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1-3, 5-7, 9-11, 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Chuah.

In reference to claim 1:

(Chuah column 37, lines 27-55) discloses a method of preventing a flooding attack on a network server in which a large number of requests are received for connection to a port number on the server, comprising:

*   Determining, in response to a request from a host for a connection to a port number on the server, if the number of connections to the port assigned to the host exceeds a prescribed threshold, and if so, denying the request for a connection, where in Chuah the decision to admit a new user is determined based on checking if the current total associated users is less than the threshold, M.

In reference to claim 2:

(Chuah column 37, lines 27-55 and figure 19) discloses the method of claim 1 in which denying the request further comprises:

*   Overriding the denial and allowing the request if a quality of service parameter pertaining to the requesting host permits the override, where in Chuah, the denial where (k<= M) is false, is circumvented, by disconnecting a lower priority connection.

In reference to claim 3:

(Chuah, column 38, lines 4-14) discloses the method of claim 2 wherein a connection request is denied in any event if the number of available connections to the port are less than a constrained threshold.

Chuah reveals the connection is denied in any event when the total number of admitted hosts is not less than the maximum number of total connections and there are no available hosts of a lower priority to disconnect.

The condition "the request is denied in any event if the number of available connections to the port are less than a constrained threshold" is inherent to Chuah's disclosure, where the connection is denied when the total number of admitted hosts is not less than the maximum number of total connections,

Claims 5-7 are rejected for the same reasons as claims 1-3, respectively.

Claims 9-11 are rejected for the same reasons as claims 1-3 respectively.

Claims 13-15 are rejected for the same reasons as claims 1-3 respectively.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 4,8,12,16 rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah.

In reference to claim 4:

Chuah discloses the methods of claims 1, 2, and 3.

Chuah fails to disclose calculating the prescribed threshold by multiplying a percentage P by the number of available connections remaining for the port as used for claims 1, 2, and 3.

The examiner takes official notice that it is well known in the art to express a threshold or boundary as a fractional value such as a ratio or percentage, especially in boundaries involving connections and traffic, such as the one disclosed by (Chuah column 35, lines 21-23)

Additionally, it is well known that to check whether a quantity remained in a fractional boundary such as a ratio or percentage, one can multiply the ratio or percentage by the total permissible value and compare it to the value in question. A benefit of this is that the boundary may be dynamically computed rather that remain a fixed value which may not be accurate in all circumstances.

It would have been obvious to one of ordinary skill in the art at the time of invention to calculate the connection admission threshold in claims 1, 2, and 3, by multiplying a percentage P by the number of available connections remaining for the port, given the benefit of establishing a

threshold using a ratio or percentage, (which may be dynamically computed) rather than using a

fixed value threshold.

Claims 8,12, and 16 are rejected for the same reasons as claim 4.

Conclusion

6.   THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy

as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of the final action and the advisory action is not mailed under after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension pursuant to 37 CFR

1.136(A) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the mailing date of this
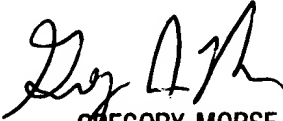
final action.

7.   Any inquiry concerning this communication from the examiner should be directed to

Thomas M Ho whose telephone number is (703)305-8029. The examiner can normally be

reached on M-F from 8:30 AM - 5:00 PM.

   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Gregory A. Morse can be reached on (703)308-4789. The fax phone numbers for the

organization where this application or proceeding is assigned are (703)746-7239 for regular

communications and (703)746-7238 for After Final communications.

   Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703)306-5484.

TMH

March 15, 2004

<div style="text-align: right;">
GREGORY MORSE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100
</div>